

REMARKS

The office action of January 18, 2007, has been carefully considered.

It is noted claims 1, 5, 7, 8 and 10 are rejected under 35 U.S.C. 102(b) over the patent to Ikawa.

Claim 2 is rejected under 35 U.S.C. 103(a) over Ikawa.

Claims 3, 4, 6 and 9 are rejected under 35 U.S.C. 103(a) over Ikawa in view of the patent application Of Kapteyn et al.

In view of the Examiner's rejections of the claims applicant has canceled claim 3 and amended claims 1 and 7-9.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions and methods disclosed in the references.

Turning now to the references and particularly to the patent to Ikawa, it can be seen that this patent discloses a method and apparatus for processing a linear groove to an air bag portion of a skin of a vehicle. Ikawa produces a weakened groove in a plastic foil by an ultrasonic welding process in which the plastic foil is preheated on its back side by hot air and is pulled through an oscillator oscillating at 20 to 40 KHz, and the groove obtained is immediately blown with cold air to stabilize the foil and to prevent melting of the wheels opposing the foil. The cross section of such a thermoplastically achieved groove is shown in Fig. 3 of Ikawa.

In the presently claimed invention, on the other hand, a mechanical cutting process takes place that does not use a preheating of the plastic foil or an immediately following cooling. The object of the invention is to make the cut so that there is a definite remaining wall strength even when the foil being processed has sections of differing thickness and thus has thickness control.

In order to accomplish this the present invention the distance to the cutting counterplate (81) is measured by a principle which is not influenced by the plastic foil being processed, this measurement signal being used to control the cutting tool. The distance sensor used in the present invention is operative based on the induction principle of measurement and is fixed to the cutting head of the cutting tool. There is no teaching or disclosure of this by Ikawa.

According to Ikawa, the cutting tool 4C is controlled by a laser gap measuring device that determines the distance of the laser head from the back side of the plastic foil (See Fig. 2, reference numeral 10 in connection with col. 5, line 1). The plastic foil itself is therefore not an object in the manner of the present invention where it is eliminated from the distance measurement, but in contrast thereto forms a separate indicator for it. In Ikawa there is no direct measurement of a distance to a cutting counterplate and thickness tolerances of the plastic foil thus remain fully disregarded. With thicker sections of foil the

knife of Ikawa results in cuts that are too shallow whereby the plastic foil upon actuation of the airbag does not tear open. This is a serious risk that is first addressed by the invention of the present application. Ikawa does not disclose a cutting tool in which the measurement of the thickness of the plastic foil is disregarded in the cutting control and is replaced by measurement of the distance to a cutting counterplate, as in the presently claimed invention.

Furthermore, Ikawa does not disclose a construction by which when cutting foil with varying thickness, after the cut the plastic foil has a remaining wall with a defined wall strength. In particular, contrary to the present invention, in Ikawa there is no measurement of the distance to a cutting counterplate which is not influenced by the plastic foil.

In view of these considerations it is respectfully submitted that the rejection of claims 1, 5, 7, 8 and 10 under 35 U.S.C. 102(b) and the rejection of claim 2 under 35 U.S.C. 103(a) over the above-discussed reference are overcome and should be

withdrawn.

The patent application of Kapteyn et al. discloses a gage thickness measurement by use of inductive sensors. Kapteyn et al. do not disclose a cutting tool in which the measurement of the thickness of the plastic foil is disregarded in the cutting control and is replaced by measurement of the distance to a cutting counterplate, as in the presently claimed invention.

The Examiner combined Kapteyn et al. with Ikawa in determining that claims 3, 4, 6 and 9 would be unpatentable over such a combination. Kapteyn et al. add nothing to the teachings of Ikawa so as to arrive at the presently claimed invention. Applicant respectfully submits that neither of these references, nor their combination, teach a construction as discussed above in connection with the independent claim.


In view of these considerations it is respectfully submitted that the rejection of claims 3, 4, 6 and 9 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome

and should be withdrawn.

Reconsideration and allowance of the present application are respectfully requested.

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on October 25, 2007.

By: 
Friedrich Kueffner

Date: October 25, 2007